

REMARKS

These remarks and the accompanying amendments are responsive to the Office Action dated January 13, 2007 (hereinafter referred to as the "Office Action"). At the time of the last examination, Claims 10-24 were pending, of which Claims 10, 11, 14, 16, 17, 19, 20, 21, 23, 24 are independent. The Office Action rejected Claims 10-24.

Section 2 of the Office Action rejects Claim 10 under 35 U.S.C. 102(e) as being anticipated by United States patent number 5,828,947 issued to Michel et al. (the patent hereinafter referred to simply as "Michel"). Furthermore, section 4 of the Office Action rejects Claims 5, 17, 18, 22 and 24 under 35 U.S.C. 103(a) as being unpatentable over Michel in view of United States patent number 5,671,219 issued to Jensen et al. (the patent hereinafter referred to simply as "Jensen"). Since Claims 10-24 are cancelled by this response, the rejection is rendered moot. However, new Claims 25-29 are presented herein, which clearly distinguish from the cited art.

New independent claim 25 is recited as follows (with reference capital letters "A" through "E" added for purposes of later reference):

(A) A mobile station for use in a CDMA mobile communication system including a base station for communicating with the mobile station, wherein in the system,

(B) the mobile station starts processing a forward communication signal received from the base station once a forward frame alignment is established, and the base station starts processing a reverse communication signal received from the mobile station once a reverse frame alignment is established,

(C) the mobile station measures, once the forward frame alignment is established, an SIR of the forward communication signal and generates a first transmission power control command

based on the measured SIR, for transmission to the base station, so that the base station carries out transmission power control in accordance with the first transmission power control command transmitted from the mobile station once the reverse frame alignment is established,

(D) whereas the base station measures, once the reverse frame alignment is established, an SIR of the reverse communication signal transmitted from the mobile station and generates a second transmission power control command based on the measured SIR, for transmission to the mobile station, so that the mobile station carries out transmission power control in accordance with the second transmission power control command transmitted from the base station once the reverse frame alignment is established, characterized in that

(E) the mobile station receives information regarding an initial value of transmission power from the base station and starts transmission power control by setting the initial value of transmission power based on the information regarding the initial value of transmission power when the forward frame alignment is established and before the reverse frame alignment is established.

Regarding element (A), the "communication system" has been modified to --CDMA mobile communication system--.

Regarding element (B): the terms "forward communication signal" and "reverse communication signal" are used in Figures 41A and 41B of the applicants' specification. The term "forward frame alignment" is described on page 91, at line 5 of the specification. The term "reverse frame alignment" is used on page 91, at line 10 of the specification. Throughout the description, the term "forward" is used as meaning a direction from the base station to the mobile station, and the "reverse" is used as meaning a direction from the mobile station to the base station. It should be obvious to a person skilled in the art, after having reviewed the description

and in light of information known to those of ordinary skill in the art, that a forward (or reverse) communication signal cannot be processed unless the forward (or reverse) frame alignment is established.

Regarding Element (C), Fig. 41B and the corresponding description under the section 5.2.1.2 (entitled "SIR-based high speed closed loop transmission power control (1) Basic operation") are relevant portions of the specification. In this section, the mobile station measures the received SIR in response to the receipt of a forward communication signal, decides the TPC bit (recited as a "first transmission power control command" in Claim 25) based on the measured SIR, and transmits the first transmission power control command to the base station, and the base station carries out transmission power control in accordance with the first transmission power control command. Fig. 43(A) shows the changes in transmission power of the base station. As shown in Fig. 43(A), the base station voluntarily increases its transmission power until the reverse synchronization (i.e., reverse frame alignment) is established, but after the reverse frame alignment, the base station carries out the transmission power control in accordance with TPC bit generated based on SIR measured at the mobile station. This is why the transmission power of the base station fluctuates after the reverse frame alignment is established as shown in Fig. 43(A). Furthermore, as described as "TPC BIT BASED ON FORWARD SIR MEASURED RESULTS" in Fig. 43(E), the mobile station starts measuring the SIR and transmits the first transmission power control command that is based on measured SIR when the forward frame alignment is established, although this command is never processed by the base station until the reverse frame alignment is established. Furthermore, the "transmission power control command" is now used instead of the "transmission power control information".

Regarding Element (D), as shown in Fig. 41A and also as described in the section 5.2.1.2. (1) on page 89 of the description which also refers to Fig. 41A, the base station measures received SIR in response to receipt of a reverse communication signal, decides the TPC bit (recited as a "second transmission power control command" in the claim) based on the measured SIR, and transmits the second transmission power control command to the mobile station. Furthermore, the mobile station carries out transmission power control in accordance with the second transmission power control command. Furthermore, as described as "TPC BIT BASED ON REVERSE SIR MEASURED RESULTS" in Fig. 43(A), the base station starts measuring the SIR and transmitting the second transmission power control command that is based on measured SIR when the reverse synchronization (i.e., reverse frame alignment) is established. Fig. 43(B) shows changes in transmission power of the mobile station. As shown in Fig. 43(B), the transmission power of the mobile station fluctuates after the reverse frame alignment is established because the transmission power control is carried out based on the second transmission power control command based on measured SIR. The use of the terms "first" and "second" is merely for distinguishing between the above two types of transmission power control commands and is not to add any new matter.

Regarding Element (E), in the now cancelled Claims 14, it was recited that the mobile station has a "second reception means for receiving the information regarding an initial value of transmission power" and that "the control means sets an initial value of transmission power in accordance with the information regarding the initial value of the transmission power". Furthermore, as shown in Fig. 43(B), the mobile station starts transmission power control when the forward frame alignment is established. Also in the section, "5.2.1.2. SIR-based high speed closed loop transmission power control (3) Initial operation (c)" on page 91, at lines 5-9 of the

description, it is stated that "establishing the forward frame alignment, the mobile station starts the relative control of the transmission power". Further in the same section, it is stated that the transmission power control is performed "using the transmission power determined in the open loop control as the initial value." However, since, on page 91, at lines 19-21, it is stated that "an initial value sent from the base station can be used instead", the initial value that is received from the base station obviously can be used when the mobile station starts transmission power control.

In summary, in the CDMA mobile communication system in which the mobile station of the present invention is used, the transmission power control of the base station is basically carried out in accordance with a first transmission power control command generated based on the SIR measured at the mobile station, and the transmission power control of the mobile station is basically carried out in accordance with a second transmission power control command generated based on the SIR measured at the based station. However, since the mobile station cannot measure SIR of a received forward communication signal unless the forward frame alignment is established, and the base station cannot measure SIR of a received reverse communication signal unless the reverse frame alignment is established, the SIR-based transmission power control is not performed in the initial stage of communication. The SIR-based transmission power control is started when both of the forward and the reverse frame alignment are established (i.e., when the reverse synchronization is established according to Fig. 43). In the initial stage, the mobile station receives information regarding an initial value from the base station and starts the transmission power control by setting the initial value of transmission power based on the received information when the forward frame alignment is established.

New independent Claim 26 recites a CDMA mobile communication system that includes a mobile station as claimed in claim 25 and a base station having the second transmission means of the previous claim 17 (now cancelled). The base station transmitting the information regarding the initial value is supported by the description on page 91, at lines 19-21. Please note that it is applicants' intention that Claim 26 be treated as an independent claim, and not as a dependent claim.

New claim 27 has incorporated third features (i.e., the phrase after "wherein") of the base station recited in the previous claim 17. Also, the new claim 27 is supported by the description on page 90, at lines 12-15, in which it is stated that "the TPC bit sequence transmitted over the forward channel is such a fixed pattern.... The pattern is set in advance." Further, as shown in Fig. 43(A), the fixed TPC bit pattern is transmitted until the reverse synchronization (reverse frame alignment) is established, and the TPC bit based on SIR measurements is transmitted after the reverse frame alignment is established.

New claim 28 is based on page 90, at lines 12-15 of the description, "the TPC bit sequence transmitted over the forward channel is such a fixed pattern ... that increases the transmission power of the mobile station stepwise". Also, as shown in Fig. 43 (B), the transmission power is increased stepwise until the reverse synchronization (reverse frame alignment) is established. This is because transmission power is increased until the reverse frame alignment is established so that the base station can process the received signal from the mobile station.

New claim 29 has incorporated the feature of the base station, "means for varying the predetermined pattern", as recited in the previous claim 18. However, according to the description on page 91, at lines 13-14, it is stated that "the BTS can change the fixed TPC pattern

...". Thus, the verb "to change" is used in new claim 29 instead of "to vary" as used in the previous claim 18.

Thus, the subject matters of new Claims 25 to 29 do not extend the content of the application as filed. Furthermore, the new claims are patentable because Michel and Jensen simply do not teach the recited features, either singly or in combination.

In conclusion, all of the Examiner's rejections set forth in the Office Action have been overcome. It is therefore requested that the application now be forwarded for granting of a patent. Further, deletion of any subject matter does not constitute abandonment thereof, and the applicant reserves the right to re-introduce the subject matter or to file one or more divisional applications in respect thereof.

In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, the Examiner is requested to contact the undersigned attorney.

Dated this 13th day of May, 2008.

Respectfully submitted,

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